

ABSTRACT OF THE DISCLOSURE

The invention provides devices and methods for generating H_2 and CO in an O_2 containing gas stream. The invention also provides devices and methods for removal of NO_x from an O_2 containing gas stream, particularly the oxygen-rich exhaust stream from a lean-burning engine, such as a diesel engine. The invention includes a fuel processor that efficiently converts added hydrocarbon fuel to a reducing mixture of H_2 and CO. The added fuel may be a portion of the onboard fuel on a vehicle. The H_2 and CO are incorporated into the exhaust stream and reacted over a selective lean NO_x catalyst to convert NO_x to N_2 , thereby providing an efficient means of NO_x emission control.